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Fulton Soil and Water Conservation District Resources Inventory

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United States Department of Agriculture

Soil Conservation Service

Ohio

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INTRODUCTION

In 1982, the Fulton Soil and Water Conservation District (SWCD), in cooperation with the USDA, Soil Conservation Service (SCS) took part in the National Resources Inventory (NRI). Information was collected on over 200 sample units to provide county reliable resource data.

This inventory provided natural resource data on (1) land use, (2) conservation treatment needs, (3) prime farmland, (4) potential cropland, (5) sheet and rill erosion, (6) flood prone areas, (7) wetlands, and (8) small bodies of water.

The study identifies erosion and land management problems in Fulton County. These problems were addressed and priorities set in the District's long-range program. Top priorities include:

- Controlling water and wind erosion on cropland.
- Utilize soil survey information for proper land use planning.
- Improve water quality.
- Agricultural drainage.
- Stabilization and improvement of woodland.
- Increase and improve wildlife habitat.
- Conservation information and education.

This publication distributes the results of the Fulton County Resources Inventory. The publication describes the soil resource base and highlights some problems that could reduce future soil productivity. Along with reduced production, off site damages could be expected. A primary objective of the Fulton SWCD is to promote the wise use of the soil resource base in Fulton County.

The information in this publication, like all information developed from a statistical study, has varying degrees of reliability or confidence levels. All values expressed here, representing over 10 percent of the county area, have a confidence level greater than 90 percent or they are at least 90 percent accurate. Smaller values, those representing less than 10 percent of the total county area, will be less than 90 percent accurate.

September 1985

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Land Use

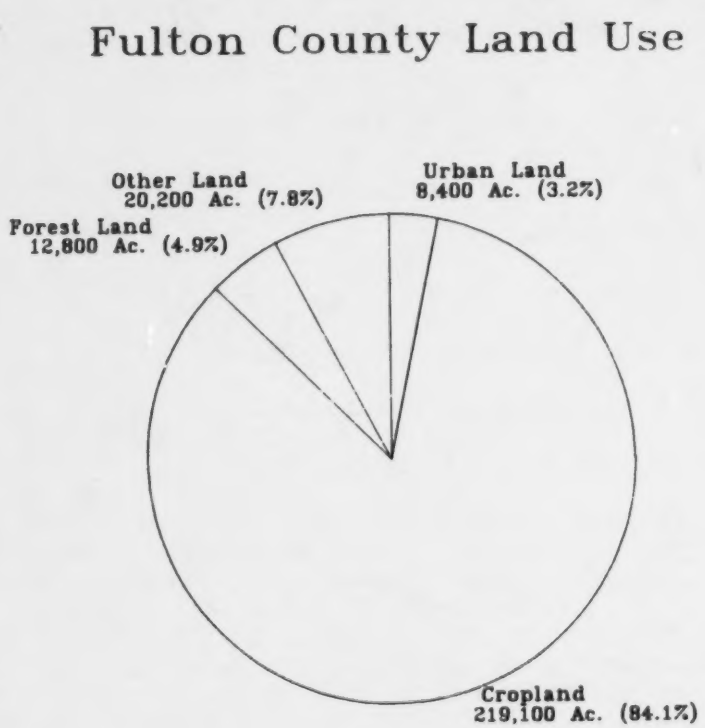
Land area measurements were made for Fulton County during the 1980 Census by the U.S. Department of Commerce.

Table 1. Fulton County Area Measurements

Nonfederal Land and Small Bodies of Water	260,500
Federal Land	0
Census Water (Large Bodies of Water)	200
Total Surface Area	260,700

This report addresses only nonfederal land.

Figure 1*



TOTAL NONFEDERAL ACREAGE IN FULTON COUNTY = 260,500 ACRES

KEY POINT:

o Cropland is the largest land use in the county.

*Other land contains 1,600 acres of pastureland.

Land Use by Capability Class

Soils can be classified in a number of ways. SCS uses a land capability classification system that groups soils on the basis of their ability to produce common cultivated crops and pasture plants without deterioration. Land capability classes and subclasses in Fulton County are based on the soil survey.

Capability classes are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of agricultural use.

Class III soils have severe limitations that reduce the choice of agricultural use.

Class IV soils have very severe limitations that reduce the choice of plants, or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Each capability class except Class I has subclasses to identify specific limitations. The letter "e" stands for erosion risk; "w" for wetness; and "s" for soils limited mainly because they are shallow, droughty, or stony.

Only Classes II, III, IV, and VI occur in Fulton County.

Table 2. Rural Land Use Acreage by Capability Class

CLASS	CROPLAND Acres	PASTURELAND Acres	FOREST LAND Acres	OTHER RURAL LAND Acres	TOTAL
II	145,100	400	4,500	3,000	153,000
III	73,200	1,200	8,300	1,700	84,400
IV	400	0	0	0	400
VI	400	0	0	500	900
NA	0	0	0	4,100	4,100
TOTAL	219,100	1,600	12,800	9,300	242,800

KEY POINTS:

- Ninety-nine percent of all cropland is on Classes II and III.

Prime Farmland

Prime farmland is one of several kinds of important farmlands defined by the U.S. Department of Agriculture. It is of major importance in providing the Nation's short and long range needs for food and fiber. Prime farmland soils are defined as the soils that are best suited to producing food, fiber, forage, feed, and oilseed crops. Such soils have properties that are favorable for the economic production of sustained high yields of crops. Prime farmland soils produce the highest yields with minimal inputs of energy and economic resources. Farming these soils results in the least damage to the environment.

Prime farmland is also the easiest and least costly to develop for non-agricultural uses. Urbanization and other land uses have the potential to consume significant areas of prime farmland. Decisions need to be made at the local level to encourage wise use of agricultural lands.

Fulton County has about 182,200 acres of prime farmland with almost all of it in Capability Classses II and III.

Table 3. Prime Farmland by Rural Land Use

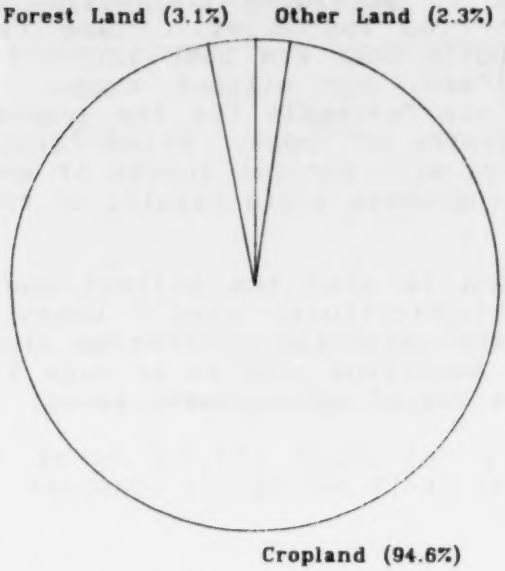
LAND USE	TOTAL ACRES	PRIME FARMLAND	
		Acres	Percent
Cropland	219,100	172,300	79
Pastureland	1,600	1,200	75
Forest Land	12,800	5,700	44
Other Land	9,300	3,000	32
TOTAL	242,800	182,200	75

Most of the prime farmland in the county is currently cropland. Figure 2 illustrates the uses of prime farmland.

Figure 2.

Use Of Prime Farmland

Fulton County



Soil Erosion

Soil erosion is a continuously occurring natural process that loosens and transports soil particles. Erosion occurs slowly on undisturbed forest land and areas with adequate permanent vegetative cover. Soil losses are quite high on sloping cropland that is continually cultivated and left unprotected during several months every year.

Over 1-1/2 million tons of topsoil erodes on Fulton County agricultural land annually. Over 99 percent of the erosion is on cropland.

Table 4. Annual Soil Erosion by Agricultural Land Use

LAND USE	ACRES	TONS	TONS/ACRE
Cropland	219,100	1,507,500	6.9
Pastureland	1,600	2,400	1.5
Forest Land	12,800	800	0.1
TOTAL	233,500	1,510,700	
AVERAGE			6.5

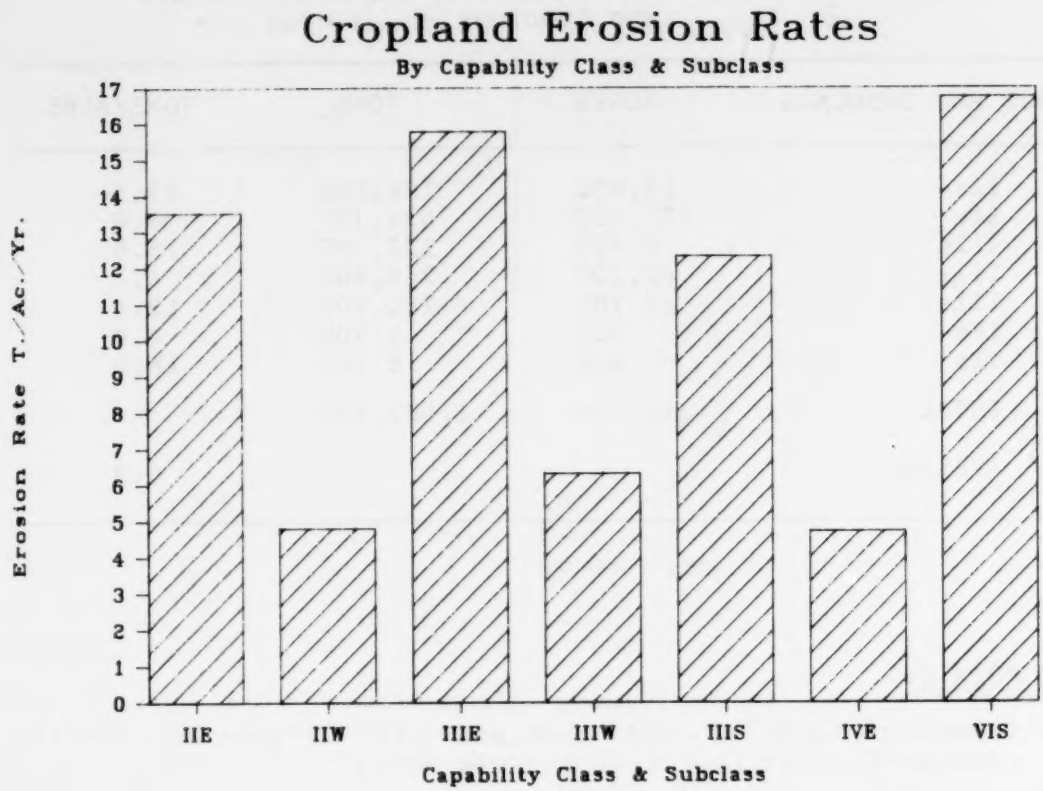
Table 5. Erosion on Cropland by Capability Class and Subclass

CLASS AND SUBCLASS	ACRES	TONS	TONS/ACRE
IIe	13,600	184,200	13.5
IIw	131,500	634,700	4.8
IIIe	8,400	132,700	15.8
IIIw	42,100	266,900	6.3
IIIs	22,700	280,400	12.4
IVe	400	1,900	4.8
VIs	400	6,700	16.8
TOTAL	219,100	1,507,500	
AVERAGE			6.9

KEY POINTS:

- o Twenty percent of all cropland has 40 percent of all erosion (Class IIe, IIIe, and VIs soils).
- o Forty percent of the erosion on Classes IIe, IIIe, IIIs, and VIs soils is due to wind erosion.
- o VIs soils have an extremely high erosion rate but acreage is limited in the county.
- o The average cropland erosion rates are nearly seven tons per acre per year in Fulton County.

Figure 3.



KEY POINTS:

- o Twenty percent of all cropland has 40 percent of all erosion (Classes IIe, IIIe, and IVs soils).
- o Forty percent of the erosion on Classes IIe, IIIe, IIIs, and VIs soils is due to wind erosion.

Soil can tolerate small amounts of erosion and remain productive for agriculture. When erosion is above this tolerable limit, the soil resource base cannot be maintained and the future ability of the soil to produce crops is threatened. The tolerable soil loss ("T") ranges from three to five tons per acre per year, with most of the soils in Fulton County having a "T" of four.

Almost 116,000 acres of cropland are eroding at rates greater than "T". There are 58,000 acres in the county eroding at rates greater than two times "T". These acres represent a serious threat to the productive capacity of the soil resource base.

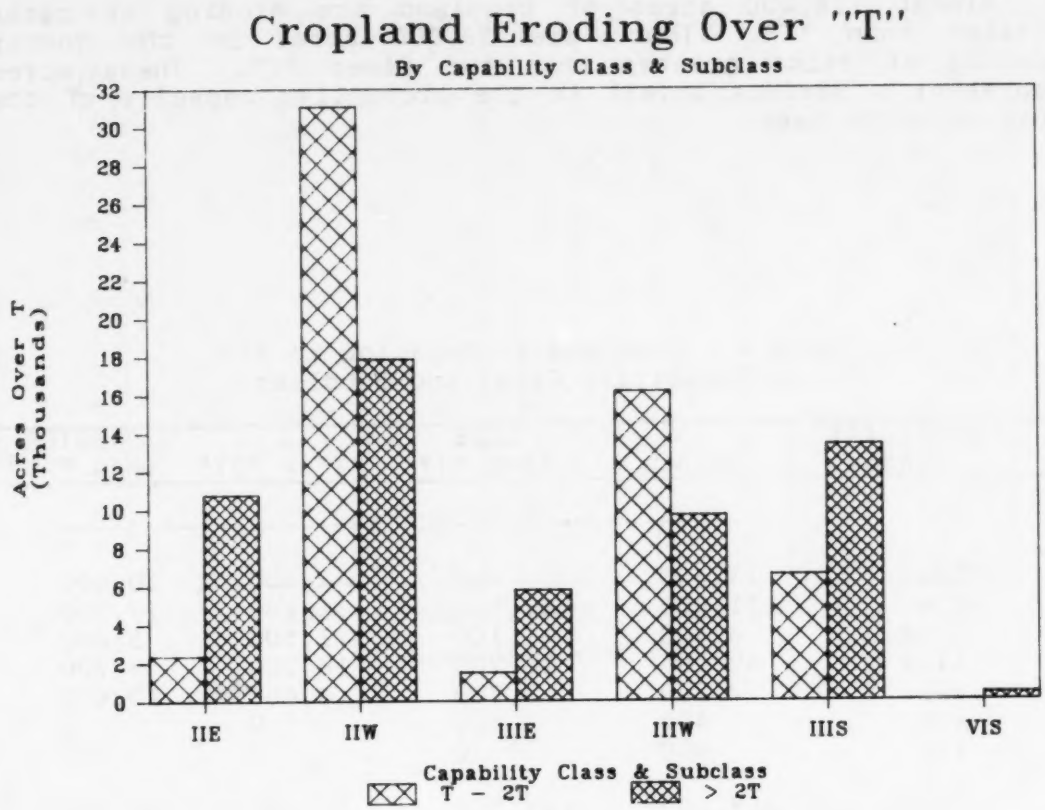
Table 6. Cropland in Relation to "T"
by Capability Class and Subclass

CAPABILITY CLASS	TOTAL	LESS THAN "T"	"T" - "2T"	GREATER THAN "2T"
	ACRES			
IIe	13,600	400	2,400	10,800
IIw	131,500	82,500	31,100	17,900
IIIe	8,400	1,100	1,500	5,800
IIIw	42,100	16,200	16,200	9,700
IIIs	22,700	2,700	6,600	13,400
IVe	400	400	0	0
VIs	400	0	0	400
TOTAL	219,100	103,300	57,800	58,000

KEY POINTS:

- o Fifty-three percent of all cropland is eroding over "T".
- o Twenty-six percent of all cropland is eroding over "2T".

Figure 4.



KEY POINTS:

- o Almost 116,000 acres of cropland are eroding over "T".
- o Class IIw has the largest number of acres eroding at "T - 2T" and over "2T".
- o Classes IIe, IIIe, and IIIs have more acres eroding over "2T" than "T - 2T". These high erosion rates are partly due to wind erosion.

Conservation Treatment Needs

Many acres of Fulton County agricultural land need one or more different types of conservation treatment to either protect or improve soil and water resources. The different conservation practices used to accomplish these objectives vary by land use.

Cropland treatment usually involves practices like conservation cropping systems, conservation tillage, grassed waterways, field windbreaks, erosion control structures, terraces, and subsurface drainage systems. Areas subject to wind erosion require special management techniques, especially in fields of high value crops such as tomatoes, melons, and strawberries.

Pastureland practices include rotational grazing, pasture management and pasture planting. These practices may be used to protect or improve soil, water, and plant resources. Conservation practices needed on forest land may include livestock exclusion, timber stand improvement, and tree planting. Land designated as adequately protected is properly managed for production and protected from excessive erosion.

Table 7. Conservation Treatment Needs and Percent By Land Use

LAND USE	TOTAL ACRES	TOTAL ACRES NEEDING TREATMENT	% TOTAL ACRES NEEDING TREATMENT
Cropland	219,100	146,700	67
Pastureland	1,600	1,200	75
Forest Land	12,800	11,700	91
Other Land	9,300	500	5
TOTAL	242,800	160,100	66

SUMMARY

Agriculture accounts for 93 percent of Fulton County land use with 84 percent used as cropland. About 75 percent of Fulton County is prime farmland and most of it is cropland.

Serious erosion problems exist on cropland. Fifty-three percent of all cropland is losing soil at excessive rates. Productivity will be reduced if erosion is allowed to continue at these high rates. Wind erosion is a major problem in Fulton County, causing both losses in soil productivity and damage to crops.

Conservation treatment is needed to conserve the resource base or increase productivity on over 66 percent of all agricultural land.

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